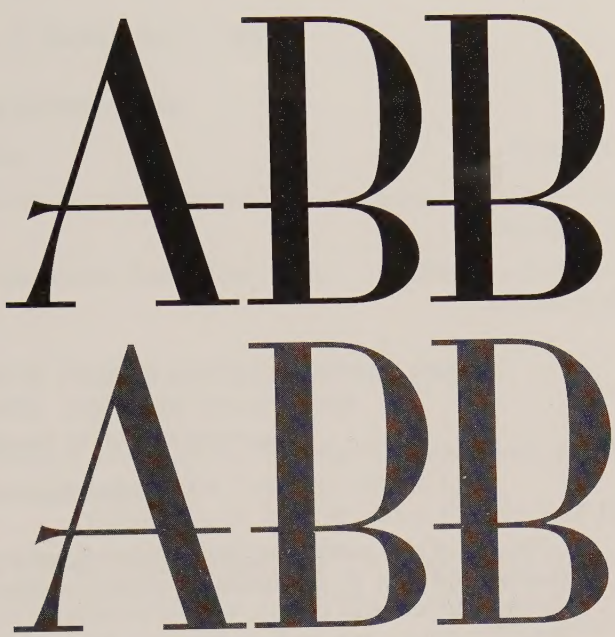
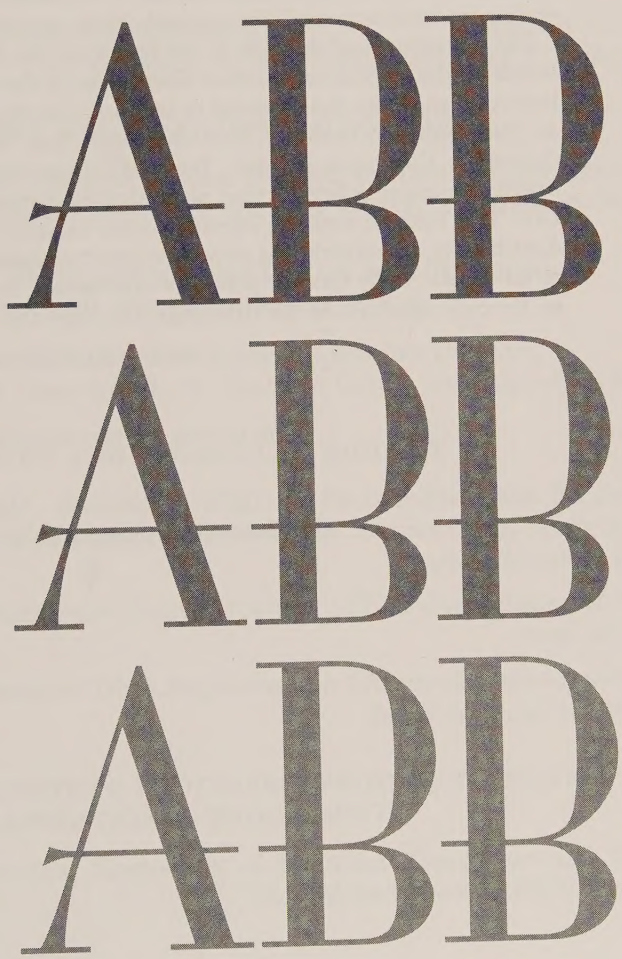


Archives of Biochemistry and Biophysics



Volume 369, 1999

ACADEMIC PRESS

Copyright © 1999 by Academic Press

All Rights Reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the Publisher. *Exceptions:* Explicit permission from Academic Press is not required to reproduce a maximum of two figures or tables from an Academic Press article in another scientific or research publication provided that the material has not been credited to another source and that full credit to the Academic Press article is given. In addition, authors of work contained herein need not obtain permission in the following cases only: (1) to use their original figures or tables in their future works; (2) to make copies of their papers for use in their classroom teaching; and (3) to include their papers as part of their dissertations.

The appearance of the code at the bottom of the first page of an article in this journal indicates the Publisher's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (222 Rosewood Drive, Danvers, Massachusetts 01923), for copying beyond that permitted by Sections 107 or 108 of the U. S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1999 articles are as shown on the article title pages; if no fee code appears on the title page, the copy fee is the same as for current articles.

0003-9861/99 $30.00

MADE IN THE UNITED STATES OF AMERICA

This journal is printed on acid-free paper.

♾

CONTENTS OF VOLUME 369

Number 1, September 1, 1999

MINIREVIEWS

Cytochrome P450 and the Individuality of Species *David R. Nelson* 1

P450 Gene Induction by Structurally Diverse Xenochemicals: Central Role of Nuclear Receptors CAR, PXR, and PPAR *David J. Waxman* 11

How Similar Are P450s and What Can Their Differences Teach Us? *Sandra E. Graham and Julian A. Peterson* 24

BIOLOGICAL OXIDATIONS: FREE RADICALS, NITRIC OXIDE, ANTIOXIDANTS, AND P450 REACTIONS

A Novel Proanthocyanidin IH636 Grape Seed Extract Increases *in Vivo* Bcl-Xʟ Expression and Prevents Acetaminophen-Induced Programmed and Unprogrammed Cell Death in Mouse Liver *Sidhartha D. Ray, M. Arun Kumar, and D. Bagchi* 42

Different Regulation of the Expression of Mouse Hepatic Cytochrome P450 2B Enzymes by Glucocorticoid and Phenobarbital *Kanokwan Jarukamjorn, Tsutomu Sakuma, Jun-Ichi Miyaura, and Nobuo Nemoto* 89

Kinetic Characterization of Mitochondrial Complex I Inhibitors Using Annonaceous Acetogenins *José R. Tormo, M. Carmen González, Diego Cortes, and Ernesto Estornell* 119

Human Selenium-Dependent Thioredoxin Reductase from HeLa Cells: Properties of Forms with Differing Heparin Affinities *Sergey N. Gorlatov and Thressa C. Stadtman* 133

Inactivation of Glucose Oxidase by Diperoxovanadate-Derived Oxidants *Aparna V. S. Rao, Paul D. Sima, Jeffrey R. Kanofsky, and T. Ramasarma* 163

BIOPHYSICAL CHEMISTRY AND X-RAY CRYSTALLOGRAPHY

Nuclear Magnetic Resonance and Oxygen Affinity Study of Cesium Binding in Human Erythrocytes *Wanrong Lin, Duarte Mota de Freitas, Qunying Zhang, and Kenneth W. Olsen* 78

ENZYME STRUCTURE AND MECHANISMS; CELLULAR REGULATION; PHOSPHORYLATION AND DEPHOSPHORYLATION

Topoisomerase II Is a Cellular Target for Antiproliferative Cobalt Salicylaldoxime Complex *D. Jayaraju, Y. N. Vashisht Gopal, and Anand K. Kondapi* 68

PLANT BIOCHEMISTRY AND MOLECULAR BIOLOGY

Prediction of the Active-Site Structure and NAD^+ Binding in SQD1, a Protein Essential for Sulfolipid Biosynthesis in *Arabidopsis* *Bernd Essigmann, Brandon M. Hespenheide, Leslie A. Kuhn, and Christoph Benning* 30

Incorporation of 1-[1-^{13}C]Deoxy-D-xylulose in Chamomile Sesquiterpenes *Klaus-Peter Adam, Rolf Thiel, and Josef Zapp* 127

The Functional Role of a DNA Primase in Chloroplast DNA Replication in *Chlamydomonas reinhardtii* *Zuqin Nie and Madeline Wu* 174

PROTEIN STRUCTURE AND FUNCTION; PROTEASES, PROTEIN TURNOVER, AND POST-TRANSLATIONAL PROCESSING

Effects of Chlorpromazine on Actin Polymerization: Slackening of Filament Elongation and Filament Annealing *Aldo Milzani and Isabella Dalledonne* 59

Multiple Unfolded States of Glutathione Transferase bbGSTP1-1 by Guanidinium Chloride *Paolo Sacchetta, Alfonso Pennelli, Tonino Bucciarelli, Lucia Cornelio, Fernanda Amicarelli, Michele Miranda, and Carmine Di Ilio* 100

Targeting of Venom Phospholipases: The Strongly Anticoagulant Phospholipase A_2 from *Naja nigricollis* Venom Binds to Coagulation Factor Xa to Inhibit the Prothrombinase Complex *Robnet T. Kerns, R. Manjunatha Kini, Steingrimur Stefansson, and Herbert J. Evans* 107

Muscarinic Acetylcholine Receptor (mAChR) Inhibitor from Snake Venom: Interaction with Subtypes of Human mAChR *Shin-ichi Miyoshi and Anthony T. Tu* 114

Amino Acid Sequences of Two High-Potential Iron–Sulfur Proteins (HiPIPs) from the Moderately Halophilic Purple Phototrophic Bacterium, *Rhodospirillum salinarum* *R. P. Ambler, M. Daniel, T. E. Meyer, and M. A. Cusanovich* 143

Functional Organization and Evolution of Mammalian Hexokinases: Mutations That Caused the Loss of Catalytic Activity in N-terminal Halves of Type I and Type III Isozymes *Henry J. Tsai* 149

N-Ethylmaleimide-Modified Hsp70 Inhibits Protein Folding *Aynih Hermawan and William J. Chirico* 157

Purification, Properties, and Amino Acid Sequence of a Hemoglobinuria-Inducing Phospholipase A_2, MiPLA-1, from *Micropechis ikaheka* Venom *Rong Gao, R. Manjunatha Kini, and P. Gopalakrishnakone* 181

Number 2, September 15, 1999

BIOLOGICAL OXIDATIONS: FREE RADICALS, NITRIC OXIDE, ANTIOXIDANTS, AND P450 REACTIONS

Purification and Characterization of Recombinant Rat Hepatic CYP4F1 *Yasushi Kikuta, Emi Kusunose, Miyuki Ito, and Masamichi Kusunose* 193

Characteristics of Chemiluminescence Observed in the Horseradish Peroxidase–Hydrogen Peroxide–Tyrosine System *Hiroko Totsune, Chiaki Ohno, Yasuhiro Kambayashi, Minoru Nakano, Yoshio Ushijima, Shozo Tero-Kubota, and Yusaku Ikegami* 233

Studies of Neuronal Nitric Oxide Synthase Inactivation by Diverse Suicide Inhibitors *Ruslana Bryk, Andrew Lubeskie, and Donald J. Wolff* 243

ENZYME STRUCTURE AND MECHANISMS; CELLULAR REGULATION; PHOSPHORYLATION AND DEPHOSPHORYLATION

Rapid and Irreversible Inactivation of Protein Tyrosine Phosphatases PTP1B, CD45, and LAR by Peroxynitrite *Ko Takakura, Joseph S. Beckman, Lee Ann MacMillan-Crow, and John P. Crow* 197

Comparison of Catalytic Activity and Inhibitors of Quinone Reactions of Succinate Dehydrogenase (Succinate–Ubiquinone Oxidoreductase) and Fumarate Reductase (Menaquinol–Fumarate Oxidoreductase) from *Escherichia coli* *Elena Maklashina and Gary Cecchini* 223

Involvement of α-Cysteine-62 and β-Tryptophan-135 in Human Pyruvate Dehydrogenase Catalysis *Lioubov G. Korotchkina, M. Showkat Ali, and Mulchand S. Patel* 277

LIPIDS, LIPID MEDIATORS, AND GLYCOLIPIDS

Phase Properties of Liquid-Crystalline Phosphatidylcholine/Phosphatidylethanolamine Bilayers Revealed by Fluorescent Probes *Taeho Ahn and Chul-Ho Yun* 288

PLANT BIOCHEMISTRY AND MOLECULAR BIOLOGY

The Molecular Cloning of 8-Epicedrol Synthase from *Artemisia annua* *Ling Hua and Seiichi P. T. Matsuda* 208

Cloning, Expression, and Characterization of *epi*-Cedrol Synthase, a Sesquiterpene Cyclase from *Artemisia annua* L *Per Mercke, John Crock, Rodney Croteau, and Peter E. Brodelius* 213

PROTEIN STRUCTURE AND FUNCTION; PROTEASES, PROTEIN TURNOVER, AND POST-TRANSLATIONAL PROCESSING

Antibodies to the Nonnative Forms of D-Glyceraldehyde-3-Phosphate Dehydrogenase: Identification, Purification, and Influence on the Renaturation of the Enzyme *Julia A. Grigorieva, Maria B. Dainiak, Alexey G. Katrukha, and Vladimir I. Muronetz* 252

Disulfide Bond Reduction: A Powerful, Chemical Probe for the Study of Structure–Function Relationships in the Hemocyanins *Richard Topham, Shirley Tesh, Amy Westcott, Gregory Cole, Danielle Mercatante, Greer Kaufman, and Celia Bonaventura* 261

Characterization of Recombinant Human CXCR4 in Insect Cells: Role of Extracellular Domains and N-Glycosylation in Ligand Binding *Huiping Zhou and Hsin-Hsiung Tai* 267

Jararhagin ECD-Containing Disintegrin Domain: Expression in *Escherichia coli* and Inhibition of the Platelet–Collagen Interaction *Ana M. Moura-da-Silva, Alex Línica, Maisa S. Della-Casa, Aura S. Kamiguti, Paulo L. Ho, Julian M. Crampton, and R. David G. Theakston* 295

Author Index for Volume 369 302

NOTICE

The Subject Index for Volume 369 will appear in the December 15, 1999, issue as part of a cumulative index for the year 1999.